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Does Pakistan Stock Exchange Offer Diversification Benefits to Regional and International Investors: A Time-Frequency (Wavelets) Analysis

Authors : Syed Jawad Hussain Shahzad, Muhammad Zakaria, Mobeen Ur Rehman, Saniya Khaild

Abstract : This study examines the co-movement between the Pakistan, Indian, S&P 500 and Nikkei 225 stock markets using weekly data from 1998 to 2013. The time-frequency relationship between the selected stock markets is conducted by using measures of continuous wavelet power spectrum, cross-wavelet transform and cross (squared) wavelet coherency. The empirical evidence suggests strong dependence between Pakistan and Indian stock markets. The co-movement of Pakistani index with U.S and Japanese, the developed markets, varies over time and frequency where the long-run relationship is dominant. The results of cross wavelet and wavelet coherence analysis indicate moderate covariance and correlation between stock indexes and the markets are in phase (i.e. cyclical in nature) over varying durations. Pakistan stock market was lagging during the entire period in relation to Indian stock market, corresponding to the 8~32 and then 64~256 weeks scale. Similar findings are evident for S&P 500 and Nikkei 225 indexes, however, the relationship occurs during the later period of study. All three wavelet indicators suggest strong evidence of higher co-movement during 2008-09 global financial crises. The empirical analysis reveals a strong evidence that the portfolio diversification benefits vary across frequencies and time. This analysis is unique and have several practical implications for regional and international investors while assigning the optimal weightage of different assets in portfolio formulation.

Keywords : co-movement, Pakistan stock exchange, S&P 500, Nikkei 225, wavelet analysis
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